

WHAT IS CLAIMED IS:

1. A composition comprising a first and second peptide, the
5 first peptide comprising a CTL-inducing epitope and the second
peptide comprising either an HIV infection-inhibiting sequence or
a T helper cell-inducing epitope.
- 10 2. The composition of claim 1, wherein the second peptide
comprises an HIV infection-inhibiting sequence.
- 15 3. The composition of claim 1, wherein the second peptide
comprises a T helper cell-inducing epitope.
- 20 4. The composition of claim 1, wherein the first peptide
comprises a sequence which is both a CTL-inducing epitope and an
HIV infection-inhibiting sequence.
- 25 5. The composition of claim 1, comprising a first, second, and
third peptide, wherein the first peptide comprises a CTL-inducing
epitope, the second peptide comprises a T helper cell-inducing
epitope, and the third peptide comprises an HIV infection-
inhibiting sequence.
- 30 6. The composition of claim 1, wherein the T helper cell-
inducing epitope is characterized as having an amphipathicity
value of from about plus 10 to about plus 20.
- 35 7. The composition of claim 1, wherein the sequence of the

first, second or third peptides comprises a sequence derived from an HIV gene product.

5 8. The composition of claim 7, wherein the sequence of the peptide comprising a CTL-inducing epitope comprises a sequence in accordance with those presented in Table 1.

10 9. The composition of claim 7, wherein the sequence of the first, second or third peptides comprises a sequence derived from an HIV envelope gene product.

15 10. The composition of claim 9, wherein the sequence of the first, second or third peptides comprises a sequence derived from HIV gp120.

20 11. The composition of claim 10, wherein the sequence of the peptide comprising a CTL-inducing epitope comprises a sequence derived from the V3 loop of HIV gp120.

25 12. The composition of claim 11, wherein the sequence of the V3 loop-derived CTL-inducing peptide comprises a sequence in accordance with those presented in Table 2.

30 13. The composition of claim 12, wherein the sequence of the V3 loop-derived CTL-inducing peptide includes the sequence RIQRGPGRAFVTIGK (R15K, seq id no:1).

35 14. The composition of claim 10, wherein the sequence of the

peptide comprising a T helper cell-inducing epitope comprises a sequence derived from an HIV gp120 sequence characterized as having an amphipathicity value of from about plus 10 to about plus 20.

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15. The composition of claim 14, wherein the sequence of the T helper cell-inducing peptide includes the sequence CRIKQIINMWQGVGKAMYA (C19A, seq id no:2).

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16. The composition of claim 9, wherein the peptide comprising an HIV infection-inhibiting sequence comprises a sequence wherein antibodies against which sequence are capable of inhibiting HIV cellular infection.

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20. The composition of claim 10, wherein the sequence of the HIV infection-inhibiting peptide comprises a sequence derived from the V3 loop, the N-terminal portion, or the CD4 binding region of HIV gp120.

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25. The composition of claim 17, wherein the sequence of the HIV infection-inhibiting peptide comprises a sequence in accordance with those presented in Table 11A. ✓

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30. The composition of claim 17, wherein the sequence of the HIV infection-inhibiting peptide includes the sequence RIQRGPGRAFVTIGK (R15K, seq id no:1), NNTRKSIRIQRGPGRAFVTIGKIG (N24G, seq id no:3), EQLWVTVYYGVPV (E13V, seq id no:4), RAFVTIGK (R8K, seq id no:5), TKGPGRVIYATGQ (T13Q, seq id no:6), or HIGPGRAYTTKN (H13N, seq id no:7).

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20. The composition of claim 19, wherein the sequence of the HIV infection-inhibiting peptide includes the sequence EQLWVTVYYGVPV (E13V, seq id no:4).

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21. The composition of claim 1, wherein the peptides are monomers, polymers or lipid-tailed peptides.

10 22. The composition of claim 1, wherein the peptides are dispersed in a pharmacologically acceptable vehicle.

15 23. The composition of claim 1, wherein the sequences of the first or second peptides are derived from an influenza virus protein or a sendai virus protein.

20 24. The composition of claim 23, wherein the sequence of the peptide includes the sequence TYQRTRALVTG or HGEFAPGNYPALWSYA.

(seq id no:3)

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25 25. A method of immunization, comprising administering to an animal an immunologically effective amount of a composition in accordance with any of claims 3 through 23.

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30 26. A method for enhancing the CTL response of an animal to a CTL-inducing immunogen comprising additionally administering to the animal an immunologically effective amount of a peptide bearing a T helper cell epitope.

27. A method for identifying a candidate substance capable of enhancing a CTL response comprising:

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- (a) administering to an animal both the candidate substance and an immunogen capable of inducing a CTL response;
 - (b) recovering CTLs from the animal; and
 - (c) determining whether the CTL response is enhanced by the presence of the candidate substance.

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28. A method for inhibiting HIV infection of target cells, comprising contacting said target cells with an immunologically effective amount of a composition in accordance with any of claims 2 and claims 4 through 22.

2 5 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 86 88 90 92 94 96 98 100